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Amendments to Claims

JUL 16 2007

1 - 17. (Canceled)

18. (Currently Amended) The catalyst of Claim 47 69 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxygen gas, hydrogen peroxide, organic peroxides and ozone.

19. (Currently Amended) The catalyst of Claim 47 69 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxidizing acids.

20. (Original) The catalyst of Claim 19 wherein said oxidizing acid is selected from the group consisting of nitric acid, perchloric acid, chloric acid, permanganic acid, and chromic acid.

21 - 30. (Canceled)

31. (Currently Amended) The catalyst of Claim 30 72 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxygen gas, hydrogen peroxide, organic peroxides and ozone.

32. (Currently Amended) The catalyst of Claim 30 72 wherein said treatment of the particulate carbon comprises contacting said carbon with an agent selected from the group consisting of oxidizing acids.

33. (Original) The catalyst of Claim 32 wherein said oxidizing acid is selected from the group consisting of nitric acid, perchloric acid, chloric acid, permanganic acid, and chromic acid.

34 - 45. (Canceled)

46. (Currently Amended) The coated substrate of Claim 45 75 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxygen gas, hydrogen peroxide, organic peroxides and ozone.

47. (Currently Amended) The coated substrate of Claim 45 75 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxidizing acids.

48. (Currently Amended) The coated substrate of Claim 45 75 wherein said oxidizing acid is selected from the group consisting of nitric acid, perchloric acid, chloric acid, permanganic acid, and chromic acid.

49. (Currently Amended) The coated substrate of Claim 45 75 wherein said carbon support has an oxygen content from about 0.1 to about 5 weight percent, based on the weight of the carbon.

50. (Currently Amended) The coated substrate of Claim 45 75 wherein the amount of said platinum is from about 50 to about 90 weight percent of the total weight of said platinum and said carbon support.

51 - 58. (Canceled)

59. (Currently Amended) The fuel cell of Claim 58 76 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxygen gas, hydrogen peroxide, organic peroxides and ozone.

60. (Currently Amended) The fuel cell of Claim 58 76 wherein said treatment comprises contacting said carbon with an agent selected from the group consisting of oxidizing acids.

61. (Original) The fuel cell of Claim 60 wherein said oxidizing acid is selected from the group consisting of nitric acid, perchloric acid, chloric acid, permanganic acid, and chromic acid.

62 - 66. (Canceled)

67. (New) A process for preparing a noble metal catalyst comprising providing a solution of a platinum reagent containing platinum having a valency less than (IV); adding an oxidizing agent; providing a solution of a ruthenium reagent containing ruthenium having a valency less than (IV) and adding said ruthenium reagent solution to said platinum reagent solution wherein at least a portion of said oxidizing agent is added to said platinum solution simultaneously with said addition of said ruthenium reagent solution, and subsequently providing treated particulate carbon; introducing said particulate carbon into said platinum reagent solution; and contacting said platinum and ruthenium reagent solution containing said particulate carbon with a precipitating agent.

68. (New) A process for preparing a noble metal catalyst comprising providing a solution of a platinum reagent containing platinum having a valency less than (IV), said platinum reagent being formed by providing an aqueous chloroplatinic acid solution and adding to said aqueous chloroplatinic acid solution sodium hydrogen sulfite to form platinum sulfite acid and adding to said chloroplatinic acid solution a suspension containing from about 0.001 weight percent to about 2.0 weight percent of dispersant or surfactant, based on the total combined weight of solids; adding an oxidizing agent; providing treated particulate carbon; introducing said particulate carbon into said platinum reagent solution; and contacting said platinum reagent solution containing said particulate carbon with a precipitating agent.

69. (New) A noble metal catalyst comprising a particulate carbon support and from about 5 to about 95 weight percent particulate metal, said metal comprising platinum, said catalyst having a total agglomerate volume less than about  $2.4 \times 10^{11}$  nm<sup>3</sup>/nm<sup>2</sup>, wherein said carbon is treated.

70. (New) A noble metal catalyst comprising a particulate carbon support and from about 5 to about 95 weight percent particulate metal, said metal comprising platinum, said catalyst having a total agglomerate volume less than about  $2.4 \times 10^{11}$

nm<sup>3</sup>/nm<sup>2</sup>, and wherein said carbon support has an oxygen content from about 0.1 to about 5 weight percent, based on the weight of the carbon.

71. (New) A noble metal catalyst comprising a particulate carbon support and from about 5 to about 95 weight percent particulate metal, said metal comprising platinum and ruthenium, said catalyst having a total agglomerate volume less than about  $2.4 \times 10^{11}$  nm<sup>3</sup>/nm<sup>2</sup>, wherein the total amount of said platinum and said ruthenium is from about 60 to about 80 weight percent of the total weight of said platinum, said ruthenium, and said carbon support.

72. (New) A catalyst prepared by providing a solution of a platinum reagent containing platinum having a valency less than (IV); adding an oxidizing agent; providing treated particulate carbon; introducing said particulate carbon into said platinum reagent solution; and contacting said platinum reagent solution containing said particulate carbon with a precipitating agent, said catalyst comprising a treated particulate carbon support and from about 5 to about 95 weight percent particulate metal, said metal comprising platinum, and having a total agglomerate volume less than about  $2.4 \times 10^{11}$  nm<sup>3</sup>/nm<sup>2</sup>.

73. (New) A catalyst prepared by providing a solution of a platinum reagent containing platinum having a valency less than (IV); adding an oxidizing agent; providing treated particulate carbon; introducing said particulate carbon into said platinum reagent solution; and contacting said platinum reagent solution containing said particulate carbon with a precipitating agent, said catalyst comprising a particulate carbon support and from about 5 to about 95 weight percent particulate metal, said metal comprising platinum, and having a total agglomerate volume less than about  $2.4 \times 10^{11}$  nm<sup>3</sup>/nm<sup>2</sup>, and wherein said carbon support has an oxygen content from about 0.1 to about 5 weight percent, based on the weight of the carbon.

74. (New) A catalyst prepared by providing a solution of a platinum reagent containing platinum having a valency less than (IV); adding an oxidizing agent; providing treated particulate carbon; introducing said particulate carbon into said platinum reagent solution; and contacting said platinum reagent solution containing said particulate carbon with a precipitating agent, said catalyst comprising a particulate carbon support and from about 5 to about 95 weight percent particulate metal, said metal comprising platinum and ruthenium, and having a total agglomerate volume less than about  $2.4 \times 10^{11}$  nm<sup>3</sup>/nm<sup>2</sup>, wherein the total amount of said platinum and said ruthenium is from about 60 to about 80 weight percent of the total weight of said platinum, said ruthenium, and said carbon support.

75. (New) A coated substrate comprising a substrate having coated thereon an electrocatalyst coating composition, wherein the electrocatalyst coating composition comprises an anode or cathode electrocatalyst comprising a particulate

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carbon support and particulate platinum having, said catalyst comprising from about 5 to about 95 weight percent platinum and having a total agglomerate volume less than about  $2.4 \times 10^{11} \text{ nm}^3/\text{nm}^2$ , wherein said carbon is treated.

76. (New) A fuel cell comprising a coated substrate, wherein the coated substrate comprises a substrate having coated thereon an electrocatalyst coating composition, and wherein the electrocatalyst coating composition comprises an anode or cathode electrocatalyst comprising a particulate carbon support and particulate platinum having, said catalyst comprising from about 5 to about 95 weight percent platinum and having a total agglomerate volume less than about  $2.4 \times 10^{11} \text{ nm}^3/\text{nm}^2$ , wherein said carbon is treated.

77. (New) A fuel cell comprising a coated substrate, wherein the coated substrate comprises a substrate having coated thereon an electrocatalyst coating composition, and wherein the electrocatalyst coating composition comprises an anode or cathode electrocatalyst comprising a particulate carbon support and particulate platinum having, said catalyst comprising from about 5 to about 95 weight percent platinum and having a total agglomerate volume less than about  $2.4 \times 10^{11} \text{ nm}^3/\text{nm}^2$ , wherein the substrate is an ion exchange membrane and said carbon support has an oxygen content from about 0.1 to about 5 weight percent, based on the weight of the carbon.